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Incentives and disincentives for using renewable energy: Turkish students' ideas

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ABSTRACT

A closed-form questionnaire was used to explore the prevalence of ideas of Turkish school students in years 7 and 8 (age 13–14 years) about renewable power generation. The questionnaire investigated students' ideas about the characteristics of renewable energy, its perceived advantages and disadvantgaes, and, separately, their views about the importance of the characteristics of energy production; it is likely that a combination of such beliefs could act as incentives or disincentives to the acceptability of renewable power. In terms of cost, about half of the students thought that it is cheaper to generate electricity from renewable sources, and only a quarter thought that renewable power generators would be expensive to dismantle at the end of their working life. There were some concerns about safety; although half of the students thought that renewable power installations were safer than other types of power generators, over half thought that renewable power generators could in some way harm plants, animals or humans that lived nearby. In terms of the capacity of renewable electricity generation, nearly two-third of the students thought that such sources could provide sufficient power for the population, and a similar proportion thought that electricity from renewable sources would be available continuously. Only about half of the students appreciated the contribution that renewable sources could make to a reduction in global warming, and more than half thought that such generators would in fact create environmental problems. Most of the characteristics mentioned were regarded as important, although the cost of electricity appeared less so to these particular students. When the responses about believed characteristics and views about their importance were combined, it appeared that the belief that renewable power could produce a reliable supply of electricity and, encouragingly, that it could contribute to a reduction in global warming, would be persuasive arguments for its implementation.

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1. Introduction

Over the past two decades there has been an increasing acceptance that global warming[1] caused by an anthropogenic exacerbation of the natural greenhouse effect is a real phenomenon. Furthermore, there has been a mounting realisation that, if left unchecked, global warming will result in major environmental, social [1,2] and economic [3] problems. Recently, the most authoritative sources have reported that some of these negative consequences of global warming are already occurring, and that others are inevitable even if the emission of atmospheric greenhouse gases could be stabilised at present levels [4]. In the light of this evidence, the political leaders of many countries have accepted, albeit reluctantly in some cases, that there is an urgent need to reduce greenhouse gas emission on a worldwide scale.

Although not the most potent greenhouse gas, much attention has focussed on carbon dioxide emitted from the burning of fossil fuels for energy production. In part, this is because so much carbon dioxide is produced by human activities such energy generation. At the same time, there is a potential for reducing such emissions by economies in energy use and by energy generation from alternative, non-carbon-based sources. In view of the magnitude of the problem of global warming, it is likely that both strategies will be required, but the present study is concerned with the latter approach, in particular, the generation of electricity from renewable resources.

Turkey is a country that, as it continues its development, will have increasing energy requirements [5]. At present, much of Turkey's home-produced energy is generated from lignite and poor-quality coal; these are problematic in terms of carbon dioxide emission, so there is the possibility that Turkey's contribution to anthropogenic atmospheric carbon dioxide will grow over the coming years. More positively, Turkey has great potential for generating energy from renewable sources [6]. For example, there is considerable possibility of using more hydropower [7]. In addition, many regions of the country are suitable for wind power [8,9], and it has been calculated that Turkey could supply a large part of its energy needs from wind farms that could be located along its western seaboard [10]. There are, however, potential barriers to the implementation of such a strategy. Apart from the financial investment that will be needed, there will need to be public support too. Athough studies in Europe show moderate to strong support for the further implementation of renewable energy [11,12], the level to which the Turkish people might or might not accept such an approach is not known.

Previous research about the level of acceptablity of renewable energy has focused on the demands [13], perceptions [14], concerns [15], knowledge [15,16], and attitudes [11–16] of adults. In a complementary manner, the aim of the present study is to explore the beliefs of Turkish school students, the up-coming generation of decision-makers, about possible incentives and disincentives to the increased use of energy generation from renewable sources. In order to do this, a questionnaire has been used to probe students' ideas about the characteristics of renewable energy production, its perceived advantages and disadvantages, and, separately, their views about the importance of various characteristics of energy production in general. This has enabled the identification of those negative ideas which are both strongly held and deemed by students to be important; such beliefs are likely to act as disincentives to the expansion of the use of renewable energy sources. Conversely, positive ideas which are strongly held and deemed to be important could act as incentives to accept the adoption of expansion of energy production from renewable sources.

[1] In this paper, for economy of words, we use the term 'Global Warming' to refer to the exacerbation of the natural greenhouse effect by the addition of anthropogenic pollutants to the atmosphere.

2. Methods

A closed-form questionnaire was used to explore the prevalence of ideas of Turkish school students ($n = 144$) in years 7 and 8 (age 13–14 years) about renewable power generation; details of the questionnnaire can be seen in Appendix A. The coversheet of the questionnaire asked students to record their age, year group and gender. It also contained items asking students about whether they would be willing to pay a price premium for electricity generated from renewable sources and whether they would be prepared to live near to a power station which generated electricity from renewable sources. The responses available for these items, which took the form of statements, were 'I strongly agree', 'I agree', 'I neither agree nor disagree', 'I disagree' and 'I strongly disagree'.

The first main section of the questionnaire explored students' ideas about various characteristics, advantages and disadvantages, of renewable electricity generation. This section contained 11 items, the form of which is exemplified by the first item, 'It is cheaper to make electricity from renewable sources (wind, waves, sun) than by other methods' and the five available responses ranged, as above, from 'I strongly agree' to 'I strongly disagree'. The second main section of the questionnaire probed students' views about the importance of various characteristics of power generation in general. This section contained eight items, of the form 'How important is it to you that using your electricity doesn't cost too much?' Here the available responses were 'very important', 'quite important', 'not very important' and 'not at all important'. The questionnaire concluded with a short section containing four items. The first of these items asked students how worried they were about the effects of global warming on the environment. The responses here were 'I am very worried', 'I am quite worried', 'I am a little bit worried' and 'I am not worried at all'. The second item in this final section asked students how much they thought they knew about global warming, with the responses being 'I know a lot about Global Warming', 'I know something about Global Warming', 'I know a little about Global Warming' and 'I know almost nothing about Global Warming'. The third question asked students how environmentally friendly they considered themselves to be, with 'I am very environmentally friendly', 'I am quite environmentally friendly', 'I am a bit environmentally friendly', and 'I am not at all environmentally friendly' as available responses. Finally, students were asked whether they believed that global warming is really happening now; here the available responses were 'I am sure Global Warming is happening', 'I think Global Warming is happening', 'I don't know whether Global Warming is happening or not', 'I think Global Warming is not happening' and 'I am sure Global Warming is not happening. The questionnaire was administered in Turkish; the wording and an English translation are shown in Appendix A.

The cover sheet of the questionnaire introduced the study and explained the response procedure. Students were informed that the questionnaire was not a test and that no information about individuals' responses could be gained. Students completed the questionnaire independently, under the supervision of their normal classroom teachers. The responses were encoded into, and analysed using, SPSS.

3. Results

Initially 155 students completed the questionnaire. In order to introduce some uniformity into the sample, the responses from 11

students were excluded from the data set because they were 12 years of age; this gave 144 students in years 7 and 8, aged 13 or 14 years. Of these, 56% were males and 44% were females. Some 40% of the students responded that they would be willing to pay more for electricity, provided it was generated from renewable sources, and this proportion rose slightly (48%) when it was proposed that everybody would pay more for renewable electricity. However, more than half of the students (54%) agreed that they would not wish to live close to a renewable electricity generator.

As a background to the two main sections of the questionnaire (Appendix A), the responses to the final four items showed that relatively few students (17%) thought that they knew 'a lot' about global warming, although in addition to these students, another two-third (68%) thought that they knew 'something' about global warming (85% in all). Nearly half of the students (47%) were 'sure' that global warming was happening now, and another 43% 'thought' this to be true. Thus 90% of the students affirmed the idea that global warming is happening. Clearly there was concern about this; nearly two-third of the students (62%) reported that they were 'very worried' about global warming and a further third (32%) reported being 'quite worried'. So, 94% of the students expressed concern about global warming. In terms of personal attitude, more than a third of the respondents (39%) considered themselves to be 'very' environmentally friendly, and a further 45% thought they were 'quite' environmentally friendly (84% in all).

3.1. Turkish students' ideas about the characteristics of renewable energy

The first main section of the questionnaire explored students' ideas about the characteristics of renewable electricity generation; the results are illustrated graphically in Fig. 1. In this figure, the left hand, darkly shaded area of each bar indicates the proportion of students who 'strongly agreed' with the statement, the next, lighter shaded area represents the percentage of respondents who 'agreed' with the statement, the central white area signifies the proportion of those who 'neither agreed nor disagreed', the right hand lightly shaded area denotes the percentage of those who 'disagreed' with the statement, and the right hand, heavily shaded area represents the fraction of students who 'strongly disagreed' with the statement. In this figure the statements have been arranged with those with the smallest percentage of students affirming the idea uppermost. In the descriptions below, the percentages given are the combined percentages for students who 'strongly agreed' or 'agreed' with the statement in the questionnaire items.

Students envisaged some economic benefits of renewable power; about half of the students (48%) thought that it is cheaper to generate electricity from renewable sources, and relatively few of the students (28%) thought that renewable power generators would be expensive to dismantle at the end of their working life. There were, however, some concerns about safety; despite the fact that about half of the students (52%) thought that renewable power installations were safer than other types of power generators, over half thought that renewable power generators could harm plants (60%), animals (65%) or humans (61%) that lived nearby. In terms of the capacity of renewable electricity generation, nearly two-third of the students (62%) thought that such sources could provide sufficient power for the population, and a similar proportion (63%) thought that electricity from renewable sources would be available continuously. In terms of environmental impacts, although about half of the students (56%) thought that there might be long-term environmental problems with renewable power generation, a similar proportion (56%) appreciated the contribution that such generators could make to a reduction in global warming. Nearly half of the students (44%) thought that their friends would disparage the idea of producing electricity from renewable sources because their peers believe that such options cause environmental damage.

3.2. Turkish students' views about the importance of characteristics of energy generation

The second main section of the questionnaire (Appendix A) explored students' views about the importance of some of the characteristics studied above in relation to methods of power generation in general; the results are presented graphically in Fig. 2. Here, the left hand, darkly shaded area of each bar indicates the proportion of students who felt that the characteristic was 'very important'. The next, lighter shaded area represents the percentage of respondents who thought the characteristic was 'quite important'. The next, lightly shaded area signifies the proportion of those who believed that the characteristic was 'not very important'; the white, right hand area denotes the percentage of those who thought that the characteristic was 'not at all important'. The statements here are arranged with those characteristics thought to be at least quite important uppermost.

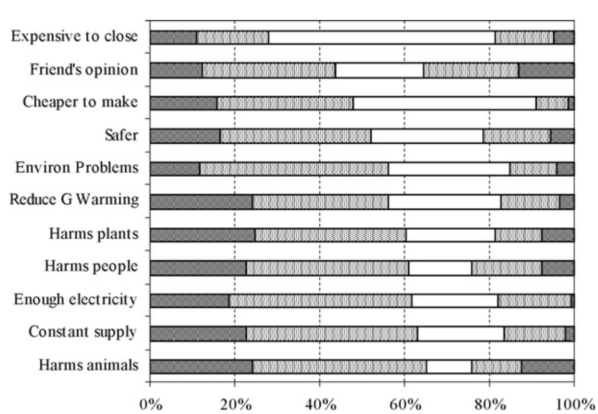


Fig. 1. Turkish school students' ideas about the characteristics of renewable energy, The left hand, darkly shaded area of each bar indicates the proportion of students who 'strongly agreed' with the statement; the next, lighter shaded area represents the percentage of respondents who 'agreed' with the statement; the central white area signifies the proportion of those who 'neither agreed nor disagreed'; the right hand lightly shaded area denotes the percentage of those who 'disagreed' with the statement; the right hand, heavily shaded area represents the fraction of students who 'strongly disagreed' with the statement.

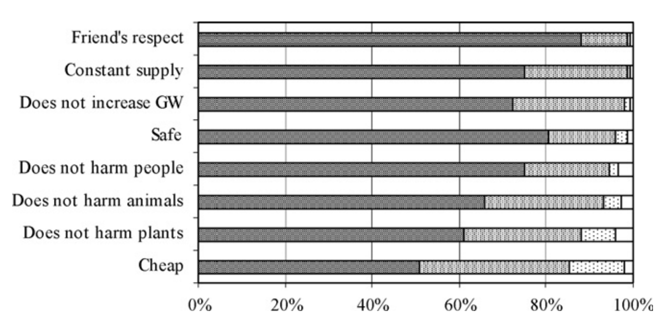


Fig. 2. Turkish school students' views about the importance of the characteristics of energy production. The left hand, darkly shaded area of each bar indicates the proportion of students who felt that the characteristic was 'very important'; the next, lighter shaded area represents the percentage of respondents who thought the characteristic was 'quite important'; the next, lightly shaded area signifies the proportion of those who believed that the characteristic was 'not very important'; the white, right hand area denotes the percentage of those who thought that the characteristic was 'not at all important'.

Very high percentages of the students expressed concern that each of the characteristics was either 'very important' or 'quite important'. In the descriptions below, therefore, in order to differentiate between the responses to different items, the percentages given are for students who thought that the characteristic was 'very important'. Most of the students (88%) thought that maintaining the respect of their friends about environmental issues was very important. Three quarters of the students (75%) held the view that a constant supply of electricity was very important, although fewer of the students (51%) regarded the price of electricity as being very important. Most of the students (81%) felt it very important that the method of generating electricity should be safe, more specifically that it should not harm plants (61%), animals (66%) or people (75%). In terms of environmental impact, about three quarters of the students (72%) judged it very important that the way in which electricity is generated should not exacerbate global warming.

In order to explore the degree of homogeneity of views of the students about the importance of various characteristics of power generation, the results from this section of the questionnaire were subjected to cluster analysis by the ward method. The resulting dendrogram indicated that there were two subsets of students. Cluster Group 1 contained 31 students; Cluster Group 2 contained the remaining 113 students. The mean scores of the responses of students in the two groups to individual questionnaire items were compared by *t*-test, but in the descriptions below the figures given are those for the percentages of students who thought the characteristic 'very important', with the data for Cluster Group 1 followed by that for Cluster Group 2. The results suggested that students in Group 2, the majority of students, attached more importance than those in Group 1 to the reliability of the supply of electricity (42%, 84%) and to the fact that it should not be too expensive to the consumer (19%, 59%). The students in Group 2 also assigned more importance to the safety of their electricity production, both in general (58%, 87%) and in terms of not harming plants (16%, 74%), animals (13%, 81%) or humans (29%, 88%). Perhaps most significantly in the present context, students in Group 2 also attached more importance to the requirement that electricity generation should not exacerbate global warming (45%, 80%), perhaps because they were more worried than the students in Group 1 about the environmental consequences of global warming (39%, 68% 'very worried'), and more convinced that global warming was already happening (32%, 50% 'sure'). Thus, there were to be a relatively small subset of students, less than a quarter, who appear less concerned about a series of characteristics of electricity generation than the majority.

3.3. Incentives and disincentives for the use of renewable energy sources

It might reasonably be argued that if a student believes a negative characteristic of electricity generation from renewable sources to be true, and if they consider that characteristic to be important, then this combination of beliefs will act as a disincentive to accepting the increased use of renewable electricity generation. In a complementary manner, if the same holds for a positive characteristic, this could act as an incentive to increasing the use of renewable electricity generation. If a student does not belief a particular characteristic to be true, or if they believe it to be true but consider it of little importance, this characteristic is less likely to influence their attitude to renewable energy sources. Fig. 3 is a scattergraph in which the mean values to pairs of questionnaire items are plotted; the abscissa represents the degree to which a characteristic is believed to be true (mean value); the ordinate represents the degree of importance with which that characteristic is held (mean value). Thus, those characteristics whose mean values are towards the upper right hand section of the plot are those that are both believed to be true and held to be important, and so are those that are likely to act as incentives (for positive characteristics) or disincentives (for negative characteristics). Examining the plot it is apparent that the belief renewable power stations produce a reliable supply of electricity could act as an incentive to adopt this form of power generation. Similarly, the belief that generating power from renewable sources can contribute to a reduction in global warming appears to be an incentive to its use. In contrast, the belief that renewable energy generators could harm organisms, especially humans, appears important to students and could act as a disincentive to accepting an expansion of this form of energy production. Safety at the actual point of production appears important to students, but it was less strongly believed that this was true of renewable power generators. On the other hand, the view that renewable energy is believed to be cheaper to produce appears less important to this group.

In order to give some quantitative indication of the relative strengths of different characteristics as incentives or disincentives an index was constructed for each characteristic. First, responses to

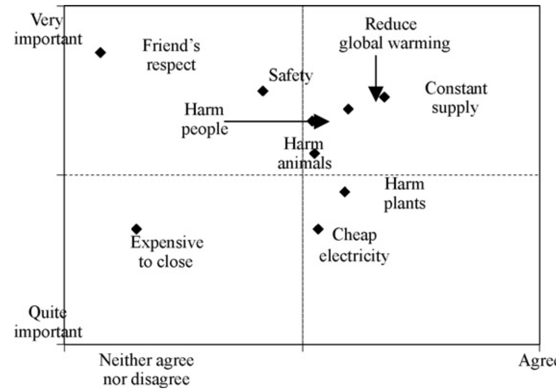


Fig. 3. Scattergram showing Turkish school students' ideas about the characteristics of renewable energy and their views about the importance of the characteristics of energy production. Scattergraph in which the mean values to pairs of questionnaire items are plotted. The abscissa represents the degree to which a characteristic is believed to be true; the ordinate represents the degree of importance with which that characteristic is held. Thus, those characteristics whose mean values are towards the upper right hand section of the plot are those which are both believed to be true and which are held to be important, and so are those which are likely to act as incentives or disincentives.

Response	Score	Response	Score
I strongly agree	+1.0	Very important	1.00
I agree	+0.5	Quite important	0.66
I neither agree nor disagree	0	Not very important	0.33
I disagree	-0.5	Not at all important	0.00
I strongly disagree	-1.0		

	Mean index
Constant supply	.308
Reduce Global Warming	.265
Cost of generating electricity	.223
Safety	.203
Friends' opinion	-.016
Cost of closing down	-.060
Harm animals	-.201
Harm people	-.210
Harm plants	-.227

Fig. 4. Construction of indices to indicate 'strength' of incentives and disincentives. The indices for each characteristic were calculated as the product of the mean for students' ideas about the extent to which the characteristic was true for renewable power generation and the mean for students' views about the importance of that characteristic.

the items were re-coded according to Fig. 4, so that the value of the index could range from +1 to −1. Each index was then calculated as the product of the mean for students' ideas about the extent to which that characteristic was true for renewable power generation and the mean for students' views about the importance of that characteristic. The values of the indices for the different perceived characteristics are also shown in Fig. 4.

Although the relative 'weightings' given to the scores for students' ideas about characteristics and their views about the importance of the characteristics are arbitrary, the influence on a person's attitude is likely to be some measure of the product of their perception of the extent to which a characteristic is true and their view of the importance of that characteristic. For this reason, the indices should give some indication of the relative ranking of the likely effects of different perceived characteristics. Given this, the data from Fig. 4 would appear to show that the idea that renewable sources can give a reliable supply of electricity could be an incentive for the acceptance of such energy sources, as could the realisation that renewable energy could help to reduce global warming. Of the characteristics studied, the main disincentives seem to be the ideas that generation installations for renewable energy could somehow harm organisms, including humans.

4. Discussion

The aim of the present study was to explore, in the context of the contribution that renewable energy production might make to reducing global warming, the factors that might act as incentives or disincentives to its increased adoption. The research was based on the premise that a strongly held idea about a characteristic of renewable power combined with a belief that this characteristic is important would influence a person's resistance to renewable power, or their acceptance of, or even enthusiasm for it.

Most of the students were either sure, or at least thought, that global warming was already happening. From other studies, it appears that about two-third of the adult Turkish population believe that global warming has an anthropogenic cause [17], and the present findings suggest that components of this view develop earlier—at least during the period of schooling. Although rather few students felt that they were well-informed about global warming, the majority felt that they knew at least something about it. This mirrors the situation in the adult population of Turkey, and indeed many other countries, where about two-third of the population claim to know at least something about global warming [17]. Students' perceptions of their own knowledge may be accurate, since the majority of Turkish school students, like those in other countries [18–20], appears to be aware of the physical consequences of global warming, although fewer appreciate at least one biological consequence—that of the increased range of insect pests [21]. Approximately 5 years ago Bozkurt and Cangüsü [22] suggested that a rather smaller proportion of students appreciate some of the physical consequences of global warming; it may be that awareness of global warming has increased even over this relatively short time period. Perhaps because students in the present study thought that global warming was happening and were aware of some of the consequences, many students expressed high levels of concern about it, in the same way as has been shown for adults [15].

It is against this general background that students' more specific ideas about renewable power generation, as studied here, can be considered. Students held some negative ideas about renewable energy, with over half thinking that renewable power generators could harm organisms, including humans. On the other hand, they also held some positive ideas about renewable energy. For example, about half believed that electricity produced in this way would be cheaper than other forms, and nearly two-third thought that energy sufficient for the population could be produced from renewable sources and, furthermore, that electricity produced in this way would provide reliable supplies. In the context of global warming, about half of the students realised that using renewable energy could contribute to a reduction in global warming, although the same proportion thought that renewable power generation would itself cause some environmental problems. We believe that education has an important role in developing environmental awareness, skills and attitudes [23], and we envisage some opportunities for teaching here. The straightforward idea that renewable energy does not result in carbon emissions (other than in the construction, maintenance and eventual disposal of the power generators) is readily accessible to quite young students [24], since renewable energy generation can be couched in terms of not requiring burning of carbon-rich fossil fuels. Furthermore, there is evidence that such teaching can be successfully embedded in the science curriculum [25].

When it came to which characteristics of power generation students believed to be important, almost all of the students thought that every characteristic was at least 'quite important', so the description below concentrates on the proportions of students who believed them to be 'very important'. Students attached high importance to safety, both in general and it terms of avoiding harm to organisms, including humans. Interestingly, students attached more significance to the health of humans than that of other animals, and more importance to the wellbeing of animals than that of plants. Rather fewer students were apparently concerned about the cost of electricity; nearly half reported that they would be willing to pay more for electricity from renewable sources and, in a complementary manner, only half of the students regarded cost as 'very important'. However, we suspect that this attitude is generated, in part least, because school students themselves do not pay household electricity bills, and that this attitude may shift once people assume this responsibility. Encouragingly, many students felt that it was a priority that power generation did not further exacerbate global warming.

Construction of an index to explore the arithmetical product of a score of belief in a characteristic and a measure of the value students give to that characteristic provided an indication of the possible role of each characteristic as an incentive or a disincentive towards renewable power generation. A strong incentive for renewable energy generation appeared to be the belief that it could produce a reliable supply of electricity. There may be a political component to this view; Turkey is not self-sufficient in terms of energy and a significant proportion of Turkey's energy needs has to be fulfilled by importing fuels [26]. Thus, the desire for a reliable supply may embrace the notion of national energy independence, avoiding political vulnerability. Indeed, the advantages of renewable power generation to Turkey have been recognised in recent legislation to enable an expansion of renewable energy, in that one purpose of the legislation is for the country to "benefit from these [renewable] sources in a secure, economic and qualified manner" [27]. The belief that renewable energy could reduce global warming, combined with a desire to see global warming reduced, also provided an incentive towards expansion in the use of such energy sources. The majority of the Turkish adult population accept that major steps to reduce global warming will have to be taken soon [17]. Clearly, with Turkey's potential for renewable power, one way in which this can be done will be to switch further from carbon-based power generation to renewable sources, and it appears that young adults may make this link and support this switch.

One slightly different issue explored by the questionnaire was the possible role of peer interaction. The most important under-

lying issue to students, of those studied, was to gain and maintain the respect of their friends. Unfortunately, a sizable minority of the students thought that support for renewable power, because it is believed by some to cause environmental damage, would elicit disapproval from their peers. One contribution to this situation might be made by co-operative learning in the classroom about the overall environmental benefits of renewable power. Not only might such learning be enjoyable and effective but, with suitable direction, it could help to minimise the notion that renewable energy is, on balance, environmentally damaging. There is no doubt that power generation presents us with conflicting demands and that renewable power production does, inevitably, carry some environmental costs. However, in view of the magnitude and comparative imminence of the negative impacts of global warming not only on our physical and biological environment [4], but also on our social structures [3], including those of Turkey [28,29], the potential of renewable energy to contribute to an amelioration of global warming must take priority. In the light of this, education has an important function in encouraging its adoption.

Appendix A. Wording of the questionnaire items (Turkish version as used, and English translation)

A.1. English version

Year group
Age
Sex

I would be willing to pay more for my electricity, provided it was made from renewable sources (wind, waves, sun).

I would only be willing to pay more for my electricity from renewable sources (wind, waves, sun) if everyone else did.

I would not want to live near a power station where they made electricity from renewable sources (wind, waves,sun).

It is cheaper to make electricity from renewable sources (wind, waves, sun) than by other methods.

Power stations that make electricity from renewable sources (wind, waves, sun) are safer than other types of power station.

Power stations that make electricity from renewable sources (wind, waves, sun) can harm the animals that live near them.

We could make enough electricity for everyone just using renewable sources (wind, waves, sun).

When we have finished with them, power stations that make electricity from renewable sources (wind, waves, sun) cost more to close down than other types of power station.

Power stations that make electricity from renewable sources (wind, waves, sun) can harm the people that live near them.

Power stations that make electricity from renewable sources (wind, waves, sun) can make electricity continuously, so that it is available all the time.

Power stations that make electricity from renewable sources (wind, waves, sun) can harm the plants that live near them.

We have not been using power stations that make electricity from renewable sources (wind, waves, sun) for very long, so we do not know about any long-term environmental problems with them.

Most teenagers look down on the idea of making electricity from renewable sources (wind, waves, sun), and think those who support it are damaging the environment.

Global warming would be reduced if more of our electricity was made from renewable sources (wind, waves, sun).

How important is it to you that using your electricity does not cost too much?

How important is it to you that the power station that makes your electricity is safe?

How important is it to you that your electricity supply is reliable, and that you have electricity all the time?

How important is it to you that the power station that makes your electricity does not harm the plants that live near it?

How important is it to you that the power station that makes your electricity does not harm the animals that live near it?

How important is it to you that the power station that makes your electricity does not harm the people that live near it?

How important is it to you that making your electricity does not make Global Warming worse?

How important is it to you that your friends respect you?

How worried are you about what Global Warming might do to the environment?

How much do you think you know about Global Warming?

How 'environmentally friendly' do you think you are? (How much do you think you 'take care of' the environment by the things you do?)

Do you think that Global Warming is really happening now?

A.2. Turkish version

Sınıf
Yaş
Cinsiyet

Elektrik yenilenebilir kaynaklardan (rüzgar, su, güneş) üretilirse elektriğim için daha fazla para ödemeye razıyım

Eğer herkes öderse, yenilenebilir kaynaklardan (rüzgar,su,-güneş) üretilen elektriğe bende fazla para ödeyebilirim.

Yenilenebilir enerji kaynaklarıyla (rüzgar,su,güneş) elektrik üreten bir santralin(güç istasyonu) yanında yaşamak istemezdim.

Yenilenebilir kaynaklardan (rüzgar, su, güneş) elektrik üretmek diğer metotlara göre daha ucuzdur.

Yenilenebilir kaynaklardan (rüzgar, su, güneş) elektrik üreten santraller diğer santral tiplerinden daha güvenlidir.

Yenilenebilir kaynaklardan (rüzgar, su, güneş) elektrik üreten santraller etraflarında yaşayan hayvanlara zarar verebilir.

Sadece yenilenebilir kaynaklar (rüzgar, su, güneş) kullanarak herkese yetecek kadar elektrik üretebiliriz.

Yenilenebilir kaynaklardan (rüzgar, su, güneş) elektrik üreten santrallerle işimiz bittiğinde bu santralleri kapatmak diğer santral tiplerini kapatmaya göre daha pahalı olacaktır.

Yenilenebilir kaynaklardan (rüzgar, su, güneş) elektrik üreten santraller yakınlarında yaşayan insanlara zarar verebilir.

Yenilenebilir kaynaklardan (rüzgar, su, güneş) elektrik üreten santraller sürekli enerji üretebilir ve bu sayede elektrik her zaman elde edilebilir.

Yenilenebilir kaynaklardan (rüzgar, su, güneş) elektrik üreten santraller çevrelerindeki bitkilere zarar verebilir.

Uzun süredir yenilenebilir kaynaklardan (rüzgar, su, güneş) elektrik üreten santralleri kullanmıyoruz. Bu yüzden uzun bir süreçte oluşabilecek çevresel problemleri bilmiyoruz.

Gençlerin çoğu yenilenebilir kaynaklardan (rüzgar, su, güneş) elektrik üretme fikrini reddediyor ve onlar bu fikri destekleyenlerin çevreye zarar verdiğini düşünüyor.

Elektriğimizin çoğu yenilenebilir kaynaklardan (rüzgar, su, güneş) sağlanırsa küresel ısınma azalacaktır.

Elektriğinizin çok pahalı olmaması senin için ne kadar önemlidir?

Elektrik üreten santrallerin güvenli olması senin için ne kadar önemlidir?

Elektriğinizin güvenilir ve her zaman sağlanabilir olması senin için ne kadar önemlidir?

Elektrik üreten santrallerin çevresindeki bitkilere zarar vermemesi senin için ne kadar önemlidir?

Elektrik üreten santrallerin yakınında yaşayan hayvanlara zarar vermemesi senin için ne kadar önemlidir?

Elektrik üreten santrallerin yakınında yaşayan insanlara zarar vermemesi senin için ne kadar önemlidir?

Elektrik üretiminin küresel ısınmayı daha kötü hale getirmemesi senin için ne kadar önemlidir?

Arkadaşlarının sana saygı göstermesi ne kadar önemlidir?

Küresel ısınmanın çevreye yapabilecekleri hakkında ne kadar endişeleniyorsun?

Küresel ısınmayı ne kadar bildiğini düşünüyorsun?

Çevreye karşı ne kadar saygılı olduğunu düşünüyorsun?

Küresel ısınmanın günümüzde gerçekten var olduğunu düşünüyor musun?

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